The poor or the vulnerable? : tracking the targets of private and public transfers in Korea with reference to the financial crisis

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The Poor or The Vulnerable?
Tracking the Targets of Private and Public Transfers in Korea with reference to the Financial Crisis*

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Abstract

Using household panel data from Korea for 1995-1998, this paper shows that during the Asian financial crisis, private and public transfers well targeted the poor, although they excluded vulnerable groups before and after the crisis. Four key findings emerge from our econometric analysis. First, households with unemployed heads were well supported by private and public transfers before and during the crisis while households with heads engaged in agriculture, fisheries and part-time jobs were supported only by private transfers during the crisis. Second, larger households that are poor but less vulnerable tended to receive more public transfers and households with more elderly that are poor and more vulnerable tended to receive more private and public transfers during the crisis. Third, female-headed households that are poor but not vulnerable tended to receive more private and public transfers while urban households that are not poor but more vulnerable received relatively less private and public transfers. Finally, we find that only poor Korean households were well protected by both inter-household transfers and government transfers during the crisis and there had been a strong crowding-out relation between private and public transfers throughout the period. This suggests that the Korean government should reconsider its targeting scheme in order to assist not only the poor but also the vulnerable and to prevent crowding-out effects of its social safety net programs.

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1. Introduction

The Asian financial crisis was truly a watershed in Korea's economic history. With the onset of the crisis, the country's real GDP and real wage contracted by 5.8 and 10 percent, respectively, between 1997 and 1998. Unemployment rate jumped from 2.6 percent to 6.8 percent and inflation rose to 7.5 percent (Bank of Korea 2001; National Statistical Office 2001). As a result of the economic downturn, poverty increased substantially in the country—the 7.5 percent share of poor urban households in the first quarter of 1997 jumped to 23 percent by the third quarter of 1998. Also, the Gini coefficient in terms of per capita income of urban households increased from 0.27 in 1997 to 0.30 in 1998 (Kakwani 2000; World Bank 2000).

In the face of crisis-induced shocks, Korean households were forced to take drastic measures to protect their living standards. In fact, the World Bank (2000) reports that Korea was able to weather the crisis through effective coping policies. Furthermore, Goh, Kang and Sawada (2001) find that as coping devices, private transfers played a significant role in protecting households in the face of crisis.

Traditional approach of studies on private transfers (e.g., Cox and Jimenez 1990, 1995; Cox, Eser and Jimenez 1998) predominantly considers only the poor as targets. However, there is another group of people who is not currently poor but faces a high probability of falling into poverty in future—the vulnerable (e.g. Morduch 1994; Glewwe and Hall 1998; Chaudhuri 2001; Chaundhuri and Datt 2001; Chaudhuri, Jalan and Suryahadi 2001; Goh, Kang, Sawada 2001).[1] Having no effective risk-coping devices, this group is vulnerable to economic downturns. Hence, we believe that considering the vulnerable as targets and evaluating the role of transfers in helping them have important policy implications in the preparation of well-designed social safety nets against a future currency crisis.

This paper extends previous studies on transfers. In this paper, the following questions are addressed: i) Who became poor and vulnerable during the crisis? (ii) What were the motives of private transfers? (iii) Who were the targets of private and public

[1] Morduch (1994) also called this group of people the transient poor or the stochastic poor.

transfers: the poor or the vulnerable? Were these transfers effective as social safety nets? (iv) Did public transfers crowd out private transfers?

Using the Korean Household Panel Survey (KHPS) data, this paper shows that private and public transfers were well targeted to the poor but not to vulnerable groups, especially during the crisis. Furthermore, there had been a strong crowding-out relation between private and public transfers observed, suggesting that the government should have careful targeting schemes to prevent such crowding-out effect of its social safety net programs.

The paper is organized as follows. Section 2 provides some theoretical and empirical background from existing work on public and private transfers. Section 3 gives descriptive evidences and Section 4 discusses the estimation model and results. The final section concludes.

2. Background

2.1 Who were poor and vulnerable before and during the crisis?

Kang (2002) identifies the poor before and during the crisis in Korea through panel estimation, using per capita total expenditure and income as the dependent variables and various household characteristics as the independent variables. His findings are as follows. First, households with heads engaged in agriculture, fisheries and part-time jobs were relatively poor. Second, households with self-employed heads were richer than those with salaried heads. Third, households with unemployed heads became significantly poorer during the crisis. Fourth, larger households were relatively poor regardless of having the possibility of income diversification or risk-sharing. Fifth, households whose heads completed primary school were relatively poor compared to those whose heads completed higher education before the crisis. Sixth, households in urban areas were significantly richer than those in rural areas. Seventh, female-headed households were not poor before and during the crisis in terms of per capita expenditure but poor in terms of per capita income. Finally, per capita expenditure was positively related with the age of household head before and during the

crisis with a diminishing slope of wage profile before the crisis.

In addition, Goh, Kang, and Sawada (2001) identify vulnerable households in Korea between 1994 and 1998. They followed Glewwe and Hall's (1998) operational measurement of vulnerability as the percentage change in per capita consumption. Their major findings are as follows. First, larger households tended to be more protected from shortfalls in consumption before and during the crisis. Second, female-headed households were remarkably not more vulnerable before the crisis and their vulnerability disappeared during the crisis. Third, urban households became more vulnerable during the crisis. Fourth, other household characteristics such as education, occupation, and age were not significant factors in identifying vulnerability before and during the crisis. Finally, public transfers are not found as effective coping devices during the initial period of the crisis because social safety net programs were not yet in place during the period of analysis.

2.2 Why would a household transfer money or goods to other households?

Previous studies on private transfers identify two motivations of private transfers (Cox 1987, 1990): altruism (Becker 1974) and self-interested exchange (Bernheim, Shleifer and Summers 1985). Households transfer resources out of feelings of altruism that implicitly determines the receiving household's consumption. Alternatively, donors give private transfers in order to receive something in exchange for their transfers in times of need.

The distinction between the altruistic and the exchange models has an important policy implication (Cox 1987; Cox and Jimenez 1990). Becker (1974), in his altruistic model, argues that public transfer programs will have little effect on the distribution of economic welfare. Under altruism, public transfers reduce the pre-transfer marginal utility of the recipient's consumption. Hence, if government were to tax the donor and give the proceeds to the recipient, the donor's intention to transfer will fade and he may decide to give less private transfers. This cutting back of private transfers in response to public redistribution is called the "crowding out" effect of public transfers. Thus, the Becker's altruism model predicts that public transfers tend

to displace private transfers.

On the other hand, exchange-motivated transfers interact with public transfers in a different way. If transfers are motivated by exchange, so that the recipient compensates the donor by providing him some kind of services, public transfers will have little effect on private transfers (Cox 1987). For example, an expansion of social insurances by government, by increasing the size of the risk-sharing pool, may be an effective social safety net device for households. In contrast to the assumption of the Becker's altruism model, the exchange model argues that crowding out between private and public transfers does not necessarily occur. Under exchange motive, public transfers may even increase the probability of receipts by providing donors additional source of income.

2.3 Why take private transfers into consideration?

Understanding the actualities of private transfers is important for designing policy interventions since, among other things, private transfers provide social and economic benefits informally which are similar to those of public programs such as unemployment insurance, pension support, educational credit, and health insurance. As such, private transfers may supplement or overlap with public transfers, and, if private donors give less as public transfers increase, the effect of public programs on beneficiaries would be less than originally intended. In short, private transfers may alter the distributional effects of public programs due to the crowding-out effect.

Existing evidences on the extent and magnitude of the crowding-out effect of public transfers are mixed. Some studies find that public transfers have little effect on private ones (e.g., Cox and Jakubson 1995; Rosenzweig and Wolpin 1994) while others (e.g., Cox and Jimenez 1992, 1995; and Cox, Eser, Jimenez 1998) have indicated that the possibility for crowding out to occur can be quite large. Cox and Jimenez (1995) estimate that if unemployment insurance system were introduced in the Philippines, private transfers would fall so much that the intended beneficiaries of the program would scarcely be any better off. In contrast, they find that the degree of crowding out associated with pensions is much less significant.

However, in East Asia, many households are likely to be altruistically linked through a widespread and operative informal transfer network. From the assumption that as public transfers increase, altruistically-linked private transfer donors may cutback their private transfer provisions (Cox and Jimenez 1990; Cox, Eser and Jimenez 1998), a government subsidy intended only for those people in need may indirectly benefit donors who are often from the upper-income brackets and protected from exogenous shocks. Hence, a quantitative assessment of the altruistic model is very important. If the assumption of this model is verified, that is crowding-out effect is proved to exist, government is then suggested to have careful targeting schemes to ensure the effectiveness of its social safety net programs.

3. Descriptive Evidence

3.1. Data

The main data source is the Korean Household Panel Survey (KHPS) that covers all prefectures except Jeju-do regardless of household's characteristics and region. Based on a stratified random sampling by street block, this data is consisted of household- and individual-level multipurpose surveys.[2] This paper employs the survey data for 1995-1998. Each round covers from August to July next year. The 1998 round is considered to reflect the period of the crisis since it covers from August 1997 to July 1998.

3.2 The impact of the crisis on household income and consumption

Table 1 shows that total income increased by 10 percent between 1995 and 1997. Labor income increased by 6.8 percent while asset income increased by 18 percent—constituting 71 and 19 percent of total income in 1997, respectively. Public and private transfers also increased but occupied only a small percentage of total income, i.e., 3.7 percent in 1997.

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[2] The data structure follows the Panel Survey of Income Dynamics (PSID) data of US.

However, with the onset of the crisis, per capita total income fell by 24.1 percent between 1997 and 1998. The two major income categories—labor and asset income—dropped by 26.7 and 40.8 percent, respectively. Private transfers remained the same. Public transfers, on the other hand, rose by 38.7 percent. Although transfer income occupied only a small share of total income, its share increased from 3.7 percent to 5.3 percent in contrast to the decrease of the share of labor income from 71.0 percent to 68.5 percent.

With the contraction of the economy, rising unemployment and falling income, household expenditure also dropped by 20.9 percent in the same period. The largest drop of 64.1 percent was in the consumption on luxurious items (durables and dining out), 16.7 percent in food consumption, and 23.7 percent in consumption on education (which includes expenses for extracurricular activities and additional after-school classes). Although the consumptions on food and education fell in absolute terms during the crisis, they constituted a higher proportion of household budgets—34.9 percent of total expenditure. The share of expenditure on nondurables remained almost the same as 26.1 and 25.3 percent, respectively, while that of luxury expenditure fell from 9.8 percent to 4.4 percent. This suggests that average households were cutting back consumption on non-essential items to weather the crisis and protect consumptions on food and education.

Table 2 shows that the percentage of households that received private and public transfers had increased since 1995. Throughout the period, there was an increasing trend in the number of households receiving private and public transfers. The percentage of households that received private and public transfers rose from 18.3 and 9.3 percent in 1997 to 21.7 and 16.3 percent in 1998, respectively. This evidence suggests that private and public transfers served as important risk-coping devices during the financial crisis.

Furthermore, Tables 3 and 4 report the percentage of recipients of private and public transfers, respectively, by characteristic of household head. By gender, there was no remarkable change. Throughout the period, the percentage of male-headed households is higher than that of female-headed households. However, considering

that the percentage of female-headed households is just about 10 percent of total sample, it can be said that female-headed households received more private and public transfers relative to male-headed households. By area, the percentage of rural households is higher than that of urban households and there was no significant change in the distribution of private transfers among these households. In regard to public transfers, while the percentage of urban households dropped by 19.4 percent, the percentage of rural households increased by 4.3 percent. By occupation, households with unemployed or non-paid heads occupied, not surprisingly, the highest share. In addition, it seems that these households were provided more by private transfers than public transfers during the crisis since their percentage of received private transfers increased by 7.5 percent, contrasts to the 11 percent fall in their percentage of received public transfers. By educational level, household heads with primary or less education covered the largest share, while highly educated household heads received an increased amount of private transfer during the crisis. Overall, there was almost no change observed by educational level even during the crisis.

Table 5 reports the pattern of private and public transfers by age of household head. Households with heads above 60 years old and below 36 years old tended to receive more private and public transfers. In 1998, for instance, households with heads above 60 years old received about 583 thousand won per capita of private transfers and those with heads below 35 years old received 231 thousand won. On the other hand, households with heads of 36-60 years old received only 70 thousand won. In total, households with heads above 60 years old tended to receive more public transfers. This is not surprising since public transfers consist mainly of pensions as indicated later in Table 8.

3.3 *Private and public transfers as social safety net devices*

One of the main concerns of this paper is to assess the role of private and public transfers as social safety net devices during the crisis. Tables 6 and 7 show the trend of private and public transfers by per capita pre-transfer income decile.

As shown in Table 6, in terms of per capita pre-transfer income decile, the poorest 10 percent group received the largest amount of private transfers, e.g., 1016 thousand won in 1998. Interestingly, during the crisis, the private transfer network was expanded to the next lowest three deciles—transfers increased by 98% in 1998 for households in the lowest 30% decile.

Table 7 shows the trend of public transfers by pre-transfer income decile. In 1998, the poorest 10 percent group received the largest amount, which is composed mainly of supports from government or social organization rather than pensions as Table 8 shows. Moreover, during the crisis, middle-percentile groups tended to receive more public transfers. The amount received by the richest 10 percent dropped by 25 percent and that by the richest 20 percent by 15 percent.

Table 8 summarizes the categories of public transfers in 1998. The second column represents the average amount of per capita pensions that includes national pension; private schools, civil servants, or military pension; and veterans' pension. The sixth column represents supports from the government or social organizations and the seventh column represents transfers from employment insurances. The last column shows the values of per capita public transfers, which are the same with the values shown in Table 7, and the last row gives the mean of public transfers in each category and of total public transfers in 1998. This table shows that the poorest half of total households received more than the average amount of total public transfers, which is 85.8 thousand won. Supports from the government or social organizations, as expected, played a positive role in supporting the poor and were therefore effective social safety net devices. However, the larger mean value of pension relative to that of supports from the government and social organization suggests that most of public transfers may have served more as sources of extra income rather than as major safety net devices. Employment insurances were negligible since the coverage of an official unemployment insurance program was expanded substantially only after October 1998.[3]

[3] The new formal unemployment insurance scheme expanded its coverage from firms with more than 30 employees to all firms as well as to temporary and daily workers.

4. Estimation

4-1. Empirical Model Specification

In order to identify the targets of private and public transfers quantitatively, we employ Cox (1987) and Cox, Eser, and Jimenez' (1998) empirical model of transfer function. These papers postulated the following stochastic model of the latent variable that determines private transfer receipts of household i at time t:

$$(1) \qquad PRT_{it} = \alpha_1 y_{it} + \alpha_2 PUT_{it} + X_{it}\beta + u_i + u_t + \varepsilon_{it},$$

where PRT and PUT are the latent variables of private and public transfers, respectively, which are observed only when positive. Per capita pre-transfer income is represented by y. The matrix, X, includes various household characteristics which determine the private transfers received by a household. The last term, ε, represents the well-behaved stochastic error term. In order to control for unobserved heterogeneity, we also include the household fixed effect, u_i, and time fixed effect, u_t, where we expect the latter to capture the aggregated effects of the Asian financial crisis.

Note that, in line with the traditional approach, income variable, i.e., per capita pre-transfer income, is included as an independent variable, which is assumed to identify the primary motive of private transfers. A negative parameter on income, i.e., $\alpha_1<0$, indicates that it is altruism-motivated since it is predicted that under altruism, public transfers reduce the pre-transfer marginal utility of the recipient's consumption and consequently, reduce private transfers. On the other hand, a positive parameter, i.e., $\alpha_1 >0$ indicates exchange-motivated private transfers. Also, the estimated coefficient on public transfers, α_2, indicates the magnitude of the crowding-out effects of public transfers.

Extending the standard approach postulated in Equation (1), the following public transfer function is also estimated to examine the determinants of government's

intervention:

$$PUT_{it} = \alpha_3 y_{it} + X_{it}\gamma + v_i + v_t + \eta_{it}, \quad (2)$$

where we also include the household and time fixed effects. Note that private transfer income is not considered as an independent variable in this equation since the government is not well informed of the status of private transfers.

Dependent variables of Equations (1) and (2) are latent variables which can be observed only when positive. Hence, one approach is to estimate Equations (1) and (2) by using Tobit models. Since conventional maximum likelihood method of Tobit model does not control fixed effects nor heteroskedastic error terms (Deaton 1997, 88-89), we estimate the binary transfer functions instead by defining the following binary variables:

$$\delta^{PRT}_{it} = 1 \quad if \quad PRT_{it} > 0, \quad (3)$$
$$= 0 \quad otherwise$$

$$\delta^{PUT}_{it} = 1 \quad if \quad PUT_{it} > 0. \quad (4)$$
$$= 0 \quad otherwise$$

Using Chamberlain's (1981) conditional likelihood function, we estimate the logit models of private and public transfers separately by assuming that the error terms of Equations (1) and (2) are independent and uncorrelated. This assumption may be plausible since unobserved factors that affect private and public transfers, will be captured by household and time fixed effects. Thus, our econometric models are the private transfer functions of Equations (1) and (3) and the public transfer functions of Equations (2) and (4). In Equations (1) and (2), other control variables, which reflect household characteristics, are included as components of the matrix, X. First, education variables as proxies of permanent income are considered. Second, age of

household head and age of household head squared are also considered. As in Cox (1990), the timing of transfers over the life cycle is important especially for countries facing liquidity constraints. If households are subject to binding borrowing constraints, for example, the transfer receipts will be concentrated at early age when current resources are low. Although many developing countries have public pensions, most of these apply only to urban workers in the formal sector and the underdeveloped financial markets of these countries lower the returns of saving for retirement (World Bank, 1989). Thus, old family members are assumed to be dependent on supports from young family members. Third, we enter control variables for household demographic characteristics: residential area, gender of household head, family size, and the number of children and elderly. Each of these variables has a possible interpretation as an indicator of the provision of inter-household services and attention to elderly parents by adult children. The number of children is probably an important determinant of transfers in light of the evidence presented earlier, which attest to the effect of young children on households' poverty status. In addition, larger households are expected to be targets of private and public transfers since they have more members to support.

4-2. Estimation results

Table 9 reports the fixed effects logit estimation results of private and public transfer functions. In order to see clearly the impact of the crisis on public and private transfers, we conducted separate estimations for before the crisis period, i.e., 1995-97 and during the crisis period, i.e., 1998. Our findings are as follows.

Before the crisis, private transfers were not well targeted to the poor since the coefficient of per capita pre-transfer income is statistically insignificant. This insignificant value fails to identify the motives of private transfers. Moreover, private transfers were not targeted to vulnerable groups since control variables such as household size, number of elderly members, education, gender and residential area appear to be insignificant in tracking the target households of public and private transfers. In addition, a significant crowding-out effect between private and public transfers is observed, which is consistent with previous findings for other countries (e.g.,

Cox 1987; Cox and Jimenez 1990, 1995; Cox, Eser and Jimenez 1998).

As for the effects of occupational characteristics, households whose heads are unemployed or non-paid workers were clearly targeted by private and public transfers and private transfers were provided to those engaged in agriculture, fisheries. However, those with self-employed heads appear to be not considered in targeting. In line with the findings on the relation of age and transfers mentioned above, the estimated value of age of household head is negative whereas that of age of household head squared is positive. This suggests that the received private and public transfers tend to decrease initially as the household head gets older and then begin to increase at a certain age level, reflecting the liquidity constraints of transfers (Cox, 1990).

On the other hand, what is the most interesting in the estimation results for during the crisis period is the coefficient on per capita pre-transfer income. In private and public transfers, pre-transfer income has negative and significant coefficients, implying that private and public transfers were clearly targeted to the poor. Furthermore, these negative coefficients indicate that the main motive of private transfers was altruism and the government's transfer provisions were able target the poor during the crisis. These results suggest that the altruistic motives of households and the role of the government were enhanced that allowed poor Korean households to depend on transfers from the government and other households during the crisis. However, we should note that there is still a strong crowding-out relation observed between private and public transfers, implying that the effectiveness of government's interventions was diluted significantly.

Other findings during the crisis can be summarized as follows. First, households whose heads are self-employed do not appear to be targeted by private and public transfers while households whose heads are unemployed or non-paid workers and those engaged in agriculture, fisheries and part-time jobs were targeted by private and public transfers. Second, larger households were clearly targeted by public transfers but not by private transfers. On the other hand, households with more elderly were well targeted by both private and public transfers although the age of household head matters only for public transfers. Third, education variables are found to be not

significant in tracking target households. On the other hand, residential area and gender of household heads appear to be significant in tracking target households. Households in urban areas tend to have less probability to receive more transfers. The significant positive coefficients for female-headed household indicate that female-headed households are more likely to receive transfers, and in larger amounts than male-headed households—a consistent pattern across countries (Lucas and Stark 1985; Kaufman and Lindauer 1986; Cox 1987; Cox and Jimenez 1989). We should note that this result is not due to the poverty of female-headed households, since even after holding current income constant—comparing transfer amounts across households with similar income levels—the same pattern persists. One possible reason for this finding is simply that females tend to live longer than males and may get more of old-age transfers through an altruistically-linked informal network and formal channel. Another reason may be that private transfers compensate females for wage discrimination in the formal labor market.

5. Conclusion

Through panel estimation both before and during the crisis, this paper intends to track the targets of private and public transfers. The following findings emerge from our analysis. Before the crisis, private and public transfers were not well targeted to the poor and vulnerable groups. Furthermore, due to the insignificant coefficient on per capita pre-transfer income in private transfers equation, the main motive of transfer behavior was not determined. However, during the crisis, private and public transfers were well targeted to the poor but not to vulnerable groups, and also, the motive of private transfer behavior was determined to be altruistic. Thus, poor households were able to cope with the crisis-induced income shocks through transfers from the government and other households during the crisis.

Households with unemployed heads were well supported by private and public transfers before and during the crisis while households with heads engaged in agriculture, fisheries and part-time jobs were supported only during the crisis by private

transfers during the crisis.

Other significant subgroup characteristics in tracking target households during the crisis are the number of children and elderly, household size, gender of household head, and residential area. Larger households that are poor but less vulnerable tended to receive more public transfers and households with more elderly that are poor but less vulnerable to nondurable expenditure shocks tended to receive more private and public transfers. Female-headed households that are poor but less vulnerable tended to receive more private and public transfers while urban households that are not poor but more vulnerable received relatively less private and public transfers.

In general, we conclude that only poor Korean households were well protected by both inter-household transfers and government transfers during the crisis. For example, less poor but more vulnerable urban households who are susceptible to macroeconomic shocks received less private and public transfers during the crisis. This implies that public and private transfers failed to protect vulnerable households, who, we believe, should also be considered as targets particularly during a crisis. In addition, there had been a strong crowding-out relation between private and public transfers observed, suggesting that the government should have careful targeting schemes to prevent such crowding-out effect of its social safety net programs

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Table 1: Descriptive Statistics for the Entire Sample

	1995	1996	1997	1998
Age of head	47.1	48.0	48.8	50.2
Household size	3.8	3.8	3.7	3.7
Total income	708.5	784.3	779.5	592.0
Pre-transfer income	688.5	757.9	749.4	561.0
Labor income	518.4	553.1	553.5	405.6
Asset income	122.0	152.3	144.3	85.4
Transfer income	19.6	26.2	29.0	31.4
Private transfers	13.3	20.5	22.8	22.8
Public transfers	6.3	5.7	6.2	8.6
Other income	51.6	58.5	55.5	73.7
Outstanding debt (formal bank loans, informal and personal loans)	203.8	238.5	217.1	300.6
Reported highly liquid assets (saving accounts, shares, bonds, insurances, and loans)	236.8	278.8	274.0	285.7
Total Expenditure	628.4	539.7	543.7	430.0
Non-durable	145.0	137.6	142.0	108.7
Food	97.9	99.1	101.1	84.2
Housing	0.3	0.3	0.3	0.3
Clothing	26.3	23.6	23.2	14.8
Education	54.0	56.9	61.5	46.9
Medical and child care	32.2	17.2	18.0	17.2
Luxury (durables and dining out)	67.3	59.0	52.6	18.9
Car	128.0	68.1	61.7	36.7
Public utilities	186.3	183.1	189.2	182.0
Others	14.9	16.4	17.5	19.7
Number of households	2985	2676	2536	2215

Note: Income and expenditure values are in 10,000 Korean won per capita household at constant 1995 prices.

Table 2. Percentage of Transfer Recipients by year (%)

	Private	Public	Total	Households
1995	13.1	6.2	17.9	2985
1996	16.7	6.5	20.9	2676
1997	18.3	9.3	22.8	2536
1998	21.7	16.3	30.6	2215
Total	15.3	7.8	20.1	13977

Table 3. Percentage of Private Transfer Recipients by Characteristic of Household Head

		1995	1996	1997	1998
Gender	Female	24.9	27.3	26.3	26.3
	Male	75.1	72.7	73.7	73.7
Region	Urban	40.8	37.7	34.8	34.6
	Rural	59.2	62.3	65.2	65.4
Occupation	Salaried	19.7	13.5	13.6	12.3
	Self-employed	11.8	11.0	9.7	9.2
	Farmers and Fishers	27.4	31.6	33.9	32.6
	Unemployed and non-paid	41.2	44.0	42.8	46.0
Education	Primary or less	46.7	53.8	51.0	49.2
	Secondary	37.5	31.6	37.2	36.0
	Tertiary	15.8	14.6	11.9	14.8

Table 4. Percentage of Public Transfer Recipients by Characteristic of Household Head

		1995	1996	1997	1998
Gender	Female	22.1	21.8	23.2	22.9
	Male	77.9	78.2	76.8	77.1
Region	Urban	39.3	31.6	30.9	24.9
	Rural	60.8	68.4	69.1	72.1
Occupation	Salaried	18.9	13.8	14.0	10.0
	Self-employed	8.7	9.8	5.5	11.9
	Farmers and Fishers	26.5	29.9	30.1	33.2
	Unemployed and Non-paid	46.0	46.6	50.4	44.9
Education	Primary or less	44.6	44.8	53.0	48.9
	Secondary	40.3	43.1	37.3	40.3
	Tertiary	15.1	12.1	9.8	10.8

Table 5. Average Per capita Private and Public Transfers by Age of Household Head

		1995	1996	1997	1998	Total
Private	Below 20					
	20-25	7.1	0	0	14.7	4.3
	26-30	23.5	27.2	48.9	24.3	19.2
	31-35	6.7	6.3	18.2	30.2	9.3
	36-40	4.6	5.8	3.4	7.7	4.3
	41-45	3.0	3.4	9.8	7.7	4.8
	46-50	4.2	1.4	1.9	1.9	2.1
	51-55	4.9	5.4	7.7	7.3	5.2
	56-60	8.4	17.0	24.1	10.5	13.5
	61-65	17.9	32.6	36.6	38.6	28.5
	66-70	51.4	81.6	49.1	57.4	58.4
	Above 70	59.0	90.0	89.6	78.9	75.5
Public	Below 20					
	20-25	0	19.0	0	2.0	4.0
	26-30	0	4.6	11.7	20.8	3.9
	31-35	2.4	1.8	3.3	6.7	2.1
	36-40	3.6	2.0	3.1	1.0	2.1
	41-45	1.3	1.0	0.6	2.1	1.0
	46-50	2.5	0.4	0.7	1.9	1.4
	51-55	3.7	5.9	4.9	5.3	4.2
	56-60	5.9	5.1	4.6	7.9	5.0
	61-65	23.1	17.4	13.6	5.4	14.0
	66-70	18.6	19.7	22.4	26.3	18.9
	Above 70	12.9	13.3	14.6	29.6	15.7

Note: Values are in 10,000 Korean won at constant 1995 prices.

Table 6. Average Per capita Private Transfers by Decile

Percentile	1995	1996	1997	1998	Change 96-97(%)	Change 97-98(%)
Per capita pre transfer income						
10	66.5	118.7	112.1	101.6	-5.6	-9.4
20	8.6	21.0	24.4	32.1	16.2	31.6
30	8.8	8.9	12.2	22.9	37.1	97.7
40	4.3	8.4	7.2	12.8	-14.3	77.8
50	2.4	8.7	9.0	7.2	3.5	-20.0
60	2.6	3.6	7.1	4.7	97.2	-33.8
70	8.6	8.0	8.0	4.3	0.0	-46.3
80	6.9	4.7	20.9	13.3	344.7	-36.4
90	8.5	12.3	9.8	7.0	-20.3	-28.6
100	12.0	12.8	22.7	11.6	77.3	-48.9

Note: Values are in 10,000 Korean won at constant 1995 prices.

Table 7. Average Per capita Public Transfers by Decile

Percentile	1995	1996	1997	1998	change 96-97(%)	change 97-98(%)
Per capita pre-transfer income						
10	24.2	28.6	27.6	30.0	-3.5	8.7
20	7.7	1.0	7.7	6.8	670.0	-11.7
30	4.1	3.9	5.7	13.2	46.2	131.6
40	2.2	2.5	2.3	8.2	-8.0	256.5
50	2.9	1.3	1.5	8.8	15.4	486.7
60	4.3	2.3	1.8	2.9	-21.7	61.1
70	3.7	3.4	3.4	5.4	0.0	58.8
80	1.4	3.6	2.0	3.3	-44.4	65.0
90	4.7	2.7	4.0	3.4	48.2	-15.0
100	7.5	6.5	6.0	4.5	-7.7	-25.0

Note: Values are in 10,000 Korean won at constant 1995 prices.

Table 8. Average Per capita Public Transfers in 1998 by Category and Decile

Percentile	Pension				Unemployment Insurance	Total
		National	Civil Servant	Veterans		
10	17.7	0.92	10.15	6.67	0.14	29.97
20	1.66	0.68	0.98	0.00	0.00	6.77
30	12.00	3.57	3.77	4.66	0.23	13.23
40	7.40	3.27	2.30	1.84	0.52	8.25
50	8.25	1.07	5.89	1.29	0.00	8.83
60	2.72	0.29	0.00	2.43	0.09	2.94
70	4.94	0.34	2.09	2.51	0.00	5.37
80	2.93	0.55	0.82	1.57	0.23	3.28
90	2.56	0.14	2.41	0.00	0.00	3.40
100	4.40	0.96	2.66	0.77	0.00	4.48
Mean	6.41	1.16	3.08	2.16	0.12	8.58

Note: Values are in 10,000 Korean won at constant 1995 prices.

Table 9. Estimation Results of Logit Models for Private and Public Transfers

	Before the Crisis		During the Crisis	
	Private	Public	Private	Public
Pre transfer income/10^3	-0.072	-0.108	-0.819	-0.672
	-0.8	-0.65	(4.35)**	(3.12)**
Public transfers	-0.008		-0.003	
	(2.95)**		(2.84)**	
=1 if the head is self-employed	0.41	-0.763	-0.21	0.275
	1.22	-0.59	-0.95	1.06
=1 if the head is in agriculture/	0.659	0.58	0.677	0.501
fisheries/Part-time	(1.97)*	0.92	(3.23)**	(2.00)*
=1 if the head is unemployed/	1.37	1.357	1.096	0.681
non-paid	(3.94)**	(2.19)*	(5.11)**	(2.65)**
Household size	-0.112	0.174	0.264	1.408
	-0.64	0.78	(2.37)*	(11.40)**
Number of children below 15	0.494	0.03	0.166	-0.166
	(2.28)*	0.11	1.7	-1.58
Number of elderly above 60	0.296	0.129	0.667	1.241
	1.69	0.57	(6.43)**	(10.82)**
Age of the head	-0.177	-0.102	-0.074	-0.206
	(2.35)*	-1.03	(2.05)*	(5.34)**
Age squared	1.337	0.791	0.691	1.948
	1.9	0.81	(2.06)*	(5.50)**
=1 if the head is a junior	-0.278	-0.124	0.13	0.373
high school graduate	-0.37	-0.13	0.66	1.74
=1 if the head is a senior	-1.966	-1.289	-0.139	0.255
high school graduate	(2.54)*	-1.13	-0.66	1.09
=1 if the head is a college	-2.293	-1.377	0.591	0.457
graduate or above	(2.20)*	-0.98	(2.36)*	1.55
=1 if the head is female	-0.871	-0.421	0.609	1.179
	-1.61	-0.58	(3.16)**	(5.53)**
=1 if the head resides in urban	33.811	-30.289	-0.361	-0.81
	0.00	0.00	(2.71)**	(5.24)**
=1 for 1995	-0.653	-0.808		
	(5.52)**	(4.78)**		
=1 for 1996	-0.203	-0.67		
	-1.93	(4.42)**		
Constant			-5.389	-10.777
			(3.57)**	(6.80)**
Observations	1755	1414	2117	2117

Notes: 1) Absolute value of z-statistics in parentheses. 2) * significant at 5%; ** significant at 1%. 3) Before the crisis model is estimated by conditional maximum likelihood method applied to a logit model with household fixed effects.